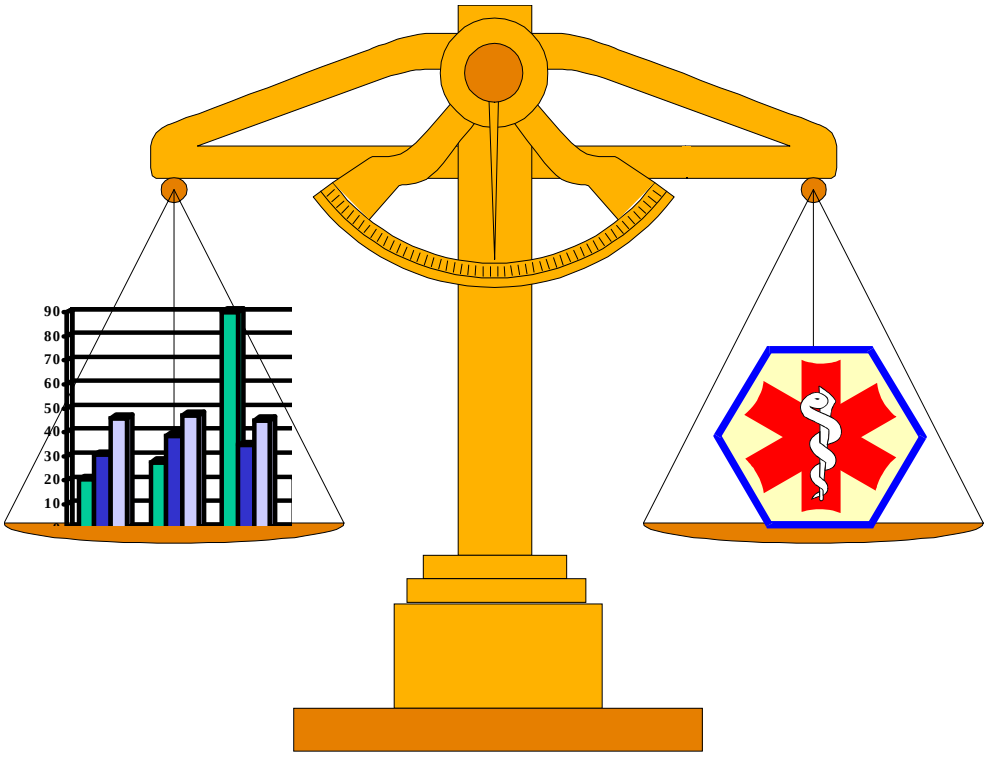
Measuring Success Through Quality Improvement



Nebraska Health and Human Services System
Emergency Medical Services

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Acknowledgment

The authors would like to thank those Emergency Medical Service Programs (EMS), Hospital Staff and Physicians who assisted us with this project. Many individuals donated time and resources to provide the authors with valuable information relating to Quality Improvement practices. We appreciate their willingness to spend time with the authors so they could better understand the needs of the entire State of Nebraska. This project could not have been completed without their support and insight. This project Is made possible through the Medicare Rural Hospital Flexibility program for Critical Care Hospitals.

Purpose of this Quality Improvement Manual

This project was created in response to an identified need for Critical Access Hospitals in the State of Nebraska to be included in the Quality Improvement processes of local EMS agencies. This concept is based upon the philosophy of a "partnership" rather than a "dictatorship." By no means is this intended to infringe upon the daily operations of EMS agencies, or the responsibilities of the EMS Program Medical Director.

This Quality Improvement Manual should serve as a template to improve the relationship between hospitals and EMS providers. We recognize that most, if not all communities enjoy a positive relationship between these two entities. We are hopeful that this information will provide additional resources to further enhance the existing structure.

The purpose of this manual is to provide a systematic approach for hospitals, medical staff, EMS providers and Physician Medical Directors to develop a joint effort for developing a Quality Improvement plan. It is intended to provide suggested methods for developing effective Quality Improvement Programs, which involves all persons involved in the patient's care. Emphasis is placed upon the relationship between the EMS provider and the hospital(s).

Furthermore, this manual is intended to help formulate a Quality Improvement Plan for EMS agencies in which no process exists. It is also intended to assist in enhancing Quality Improvement processes, which are already in place.

Method of Development

Both authors have a combined average of 10 years in pre-hospital Quality Improvement (QI). Based upon this experience, the authors recognized that this manual must contain input from as many outside resources as possible. The authors interviewed twelve different agencies (hospital and EMS) throughout the State of Nebraska, who provided much of the information contained within this manual.

This valuable feedback allowed the authors to understand the feasibility of all Quality Improvement processes, and the effect they might have upon all EMS agencies and the hospitals they deliver patients to. It is clear that some processes may be effective within one community, but undesirable or impossible for another.

Based upon the feedback of these agencies, the authors were better able to understand the needs and desires of the entire State of Nebraska. The diversity of system designs is reflected in the format of this document. It is the goal of this project to evaluate and improve the quality of patient care for each and every service program. The authors recognize that many agencies are limited by financial resources, training availability, and lack of personnel and local politics. Therefore, the structure of this manual remains flexible and dynamic.

Quality Improvement Terms

benchmarking: The practice of setting operating targets for a particular function by selecting the top performance levels, either within or outside a company's own industry. Benchmarking involves searching for and copying new ideas and best practices for the improvement of processes, products and services.

cause: The reason for a problem or defect.

critical indicator: Clearly defined measurements that compare various input and process characteristics.

customer: The recipient or purchaser of the product or service(s).

effectiveness: Conformity to requirements; the degree to which the service is performed in the correct and desired manner.

external customers: Individuals, entities and organizations who are outside of the actual operation of the EMS system and who receive services provided by the EMS system, a component of the system, or an individual working within the system. External customers include physicians, allied health professionals, law enforcement and all individuals and agencies that are indirectly involved in the patients care

internal customers: Individuals, entities and organizations who are involved in or with the operation of the EMS system and who receive services provided by the EMS system, a component of the system, or an individual working within the system. Internal customers include EMS' employees and volunteers, members of the leadership councils or committees that plan and coordinate the system.

linkage: Interactions that effect coordination and completion of tasks.

mission statement: A statement that describes the fundamental reasons for the existence of the organization.

objectives: Measurable statements that are consistent with the mission.

process management: Improvement of work activities and work flow across functional or department boundaries.

quality: The extent to which products and services meet or exceed customer requirements.

(QI Terms Cont'd)

quality assurance (QA): Retrospective review or inspection of services or processes that is intended to identify problems.

quality care: The extent to which health care services meet the patient's needs and produce the desired health outcome.

quality improvement (QI): The continuous study and improvement of a process, system or organization.

quality indicators: Characteristics of products, services or processes that represent quality.

sentinel event: An undesirable event or phenomenon that triggers further analysis and investigation.

stakeholder: Individuals and organizations, other than the patient who receive the EMS services, that have some interest in the operation of the EMS organization, e.g., the patient's family, the community in which the EMS system operates, government officials, the patient's insurer / third-party payer, and allied health care providers.

Quality Improvement terms Obtained from: National Highway Traffic Safety Administration, Leadership Guide to Quality Improvement for EMS Systems. September 1997. www.nhtsa.dot.gov

Understanding Quality Improvement for EMS Systems

Currently there is a minimal amount of published research in the area of QI and its relationship to EMS Systems. This most likely is due to the fact that QI is a relatively new concept for pre hospital care. Though the philosophy of QI/QA has been present in general industry for the past 30 years, it remains virtually untested in many EMS systems. Recognizing the fact that there are many types of EMS structures throughout the world, it is accepted that QI plans and strategies must be individualized for each system.

One of the obstacles for QI in EMS is that most existing QI/QA research is based upon the manufacturing of products rather than the delivery of services. Japanese auto-makers have been utilizing QI since the end of WWII. The Japanese have used this method to reinforce the belief that defective products can be prevented by analyzing the process, rather than the result. Should the result or product be flawed, it can then be treasured as an opportunity to improve the process.

EMS in contrast, does not create a product; rather it provides a service. As a result, the measurement of flaws or defects can be challenging. One way to view this is to think, “Rather than do nothing, and just respond to complaints, we will attempt to reduce the number of complaints received.” As you can see, QI in EMS system focuses on the actions of the providers rather than the outcome. Though outcome data is important, it is impossible to “un-do” what has already been done. We can only use that information to measure against the past and make improvements for the future.

Perhaps the single most important element of QI plans is the ability to measure. Just as a teacher grades the results of an exam, EMS systems are afforded the opportunity to grade themselves. Virtually any action that is performed, has the potential to be measured. Any time that someone dials 911, a plethora of key indicators can be measured.

Measuring Quality

Quality indicators refer to clearly defined measurements that compare various processes. For each unique EMS system, these should be individualized. What is important for one EMS system may not be for another. Perhaps one agency responds to a greater number of motor vehicle accidents. They may want to focus on measuring the average time for extrication. Another agency may respond to a majority of drownings and want to focus key indicators on open water safety programs.

For example, many EMS systems measure the outcomes of patients suffering a cardiac arrest. This is a simple process because the outcomes are positive or negative. They are left with a percentage of patients who are successfully resuscitated from cardiopulmonary arrest. This percentage becomes the standard in which they can benchmark with other EMS systems, use to promote the agency, and to notice any positive or negative changes in the system's performance.

Another example would be EMS systems that sends out customer satisfaction surveys. This process results in feedback from internal and external customers. Based upon the feedback, agencies are able to measure the amount of satisfaction received by patients and other stakeholders. This feedback can help identify strengths and weaknesses of the EMS system, resulting in changes based on evidence rather than hunches or "gut feelings."

Training programs can benefit in many ways from an effective QI program. A QI program may choose to measure how many times a particular procedure is performed on a monthly basis (e.g. splinting, intubation, and defibrillation) and then base the EMS training needs on the skills performed the least number of times.

EMS agencies may request patient diagnosis from the receiving hospital on a regular basis. The QI plan could then measure how often the provider's impression matches that of the hospital. This process can help identify areas needing additional training.

Implementation of the QI Plan

To work to improve quality, there must be a commitment to a new approach to attaining quality. The role of "leadership" moves from a traditional "top-down" management style to one which promotes all workers be involved. This means that quality is the responsibility of everyone, rather than just one or two people. To promote this quality concept it must without a question of a doubt, have the support of the administrators, supervisors, chiefs, captains or any other management.

Quality Improvement must be facilitated by leadership, it cannot be demanded. Ownership of the QI plan must be evenly distributed amongst the entire group of stakeholders. Each and every stakeholder must clearly understand the mission and QI process.

Step 1: Leaders must accept responsibility for the QI process and promote its development.

Step 2: Develop a QI team, which should involve EMS providers, hospitals, medical staff, and the EMS service Medical Director.

Step 3: Record the mission statement of the QI team.

Step 4: Explore options for joint and individual agency goals.

Step 5: Continually meets and reassesses the QI team effectiveness.

How do we know when we are finished?

QUALITY IMPROVEMENT IS NEVER-ENDING PROCESS!

Methods for Delivering the QI Plan

Once the QI team has been assembled, a list of long term and short term goals should be completed based upon the mission statement. The following section will outline suggested activities for accomplishing these goals by utilizing a QI process.

You are encouraged to determine as a group, what methods (activities) will best suit your needs and are the most feasible to accomplish. It is understood that some agencies may already be actively participating in a number of these suggested methods. It is further understood that some agencies may have limited resources, which may hinder their ability to perform all of these activities.

- These activities are designed to provide the QI team with the purpose, method and examples to measure each critical indicator.
- Selection of the activities should be only done after the QI team has been assembled and the mission statement has been clearly determined.
- QI teams may decide how many of these activities they want to develop. QI teams are also encouraged to design new activities for measuring quality.
- Again, it should be re-emphasized that this QI process should at a minimum include the hospital staff, EMS providers and the Medical Director.

QI Activities

#1-Provider Recognition

Purpose:

Customers are internal (providers) and external (general public). QI programs should readily recognize the efforts made by individuals and agencies which promote a higher quality of patient care. By delivering positive reinforcement, all stakeholders feel appreciated and will continue to participate in the QI plan. Without this positive reinforcement, stakeholders may question the validity of excelling beyond the standards. Enthusiasm and interest will quickly decline in a system that does not appreciate excellence.

Method:

Recognition should be provided on a regular basis. Stakeholders must clearly understand the process by which it is identified. This recognition should be done publicly so that all customers are aware of the benefits for performing at a higher level. Peers and the QI team should be involved in the selection of who receives this positive recognition.

Examples:

1. The hospital and EMS agency holds an annual picnic. During this picnic providers and hospital staff are given awards for various accomplishments during the previous year.
2. A “Lifesaver Award” is presented to anyone who provides bystander CPR to cardiac arrest patients.
3. Young children who dial 911 appropriately, are given recognition in the local newspaper.
4. The QI team produces a quarterly newsletter that is mailed to the community. This newsletter identifies individuals and agencies, which have made positive contributions to the EMS community or hospital.

QI Activities

#2-Data Collection and Analysis

Purpose:

Virtually any action that is taken can be assigned a number value. Consequently, any number can be measured and compared with other numbers. The collection of data allows the QI team to identify frequency, trends, improvements, declines and other areas that are actionable. The collection of data also assists the QI team in benchmarking with similar EMS systems.

Method:

Many types of computer software programs allow the input of various types of data. The operator is then allowed to perform analysis of this data with queries or tallies. This process is relatively easy and efficient. The drawbacks lie within the cost of operating a computer and price of the software. QI teams can also manually record data by hand. Though a slower process, this provides a simple and cost-efficient method for data collection.

Examples:

1. The QI team records the response time for each request for service. This time is averaged for a period of time. The QI team then monitors this data to identify any changes.
2. Completed run sheets are entered into the computer. Questions can be asked of the data. Such as: most frequent time of day for EMS runs, number of times a procedure is done, average scene time for trauma patients, etc.
3. The hospital provides the admitting diagnosis for each patient delivered by the EMS service. The QI team can then determine if the providers were correct in their impression.

4. The QI team records how many cardiopulmonary arrest patients received bystander CPR. The team may then decide if public education would be beneficial.

QI Activities

#3-Customer Satisfaction

Purpose:

Surveying the customers, both internal and external is similar to getting graded on performance. Many times we assume that "no news is good news." That is not at all the case with EMS systems. By allowing the general public and health care providers to express their likes and dislikes, we are better able to focus the QI teams attention to areas needing improvement. By not surveying our customers we run the risk of allowing problems to escalate to a level which may be difficult to control.

Method:

Customer satisfaction can be measured in many ways. Sending the patient or family a "feedback card" allows them the opportunity to express their perceptions on the quality of care that they received. This is a less formal process, but gives the QI team data, which can be monitored over long periods of time. Another method of measuring customer satisfaction is to call or visit with the patient or patient's family. This also provides measurable data, and gives the stakeholders a sense of importance.

Examples:

1. A stamped customer survey card is sent to the patient's home one week after the date of transport. This brief survey may ask; did you feel the service met your expectations? Do you have any suggestions for improving our service? Would you use our service again? This can be accomplished with a qualitative measurement of 1-5 on a satisfaction scale
2. A member of the QI team randomly selects five patients per week

and contacts them by phone. The responses are recorded and entered into the database for measurement.

QI Activities

#4-Skill Maintenance

Purpose:

Rather than randomly select areas to focus training needs upon, QI teams should identify what skills or procedures are deficient or not performed on a frequent basis. Obviously, skills which are not performed on a regular basis should receive adequate training attention. Furthermore, the Service Medical Director should monitor which individual providers are not meeting the skill maintenance standards.

Method:

By compiling a database which records how often a particular key indicator is performed, measurements can be established. Based upon these measurements, the frequency and total number of skills can be obtained. Physician Medical Directors can then determine the minimum number required to maintain clinical proficiency for a particular skill.

Examples:

1. Data analysis determines that defibrillation is performed on an average of two times a year by XYZ Ambulance Service. Based upon this, the Physician Medical Director and QI Team determine that each member of the service program should train with defibrillation no less than six times per year. If the average number of defibrillations in the field increases dramatically, then consequently the number of training sessions could decrease.
2. Based upon comments made on the customer satisfaction cards, the QI team notes that patients consistently complain about how

long the crew was at the scene. Other QI team data verifies an average scene time of 20 minutes. Training is then based on performing a more rapid assessment and utilization of resources.

QI Activities

#5-Patient Care Report Reviews

Purpose:

Patient Care Report (PCR) reviews are an essential activity for a Quality Improvement program. Reviewing PCR's can be an on-going process to provide feedback for the providers. The use of the chart to collect information allows the reviewer the opportunity to collect a broad range of information. The PCR is a valuable source of information regarding the care delivered to the patient(s). The information can then be used to guide the other QI projects.

Method:

PCR's are reviewed by the QI team or an individual. This person(s) needs to have a thorough understanding of the service program's equipment, protocols, and the Medical Director's standards. The selection of PCR's to review can be 100% for lower volume services but can be done on a random selection basis, for services that average more than 20 calls per week.

Examples:

1. Review of charts finds that several providers are incomplete in their written assessment for fractured extremities. Appropriate feedback can be given to the providers writing the charts, or the next training session can include a review for everyone discussing the pertinent assessment points for fractures.
2. Review of charts finds that the average time from arrival at scene to defibrillation for cardiac arrests is 3.5 minutes. This is higher than the two-minute goal that the medical director has set. The QI

team then looks at all potential causes for this delay, and makes training recommendations for improvement.

QI Activities

#6-Continuing Education

Purpose:

Continuing Education is a process involving all levels of medical service providers. Continuing Education needs should be pre-determined so that the classes can be effectively planned. Consideration for the providers time and the funding to make high quality programs available is important.

Method:

Continuing Education is available for virtually any EMS subject. Continuing education should be done for those skills that are rarely done by an EMS service so that the providers are properly prepared when the situation presents itself. It is also valuable to continuously advance the level of knowledge for providers that do a skill frequently. The QI team through PCR reviews and measuring data, must play an influential role in making training recommendations. Additionally, the QI team should assure that evaluations are performed to measure the effectiveness of the training provided.

Examples:

1. Review of the call activity for a service shows that the providers of a service program have not assisted with a patient's childbirth. The management of this medical emergency should be one of the subjects reviewed so that they can be properly prepared for this type of event if it is presented.

2. Review of the call activity for a service shows that cervical-spine immobilization is a frequent skill performed by the providers of a service program. Continuing Education should include this topic to advance the providers' knowledge since they are involved in caring for a larger number of patients with this type of problem.

QI Activities

#7 Quality Improvement Meetings

Purpose:

QI meetings are held to communicate the findings and plans of the various activities to other groups in the system. Many QI projects will require the support of the system's stakeholders. These meetings may involve combinations of participants that may have an impact on the service of the program. Meetings of these groups can work towards improving the system of patient care. The situations can be based on improving medical care, system changes, planning for special events, etc.

Method:

The EMS System requires the coordinated efforts of other agencies including the hospital staff, law enforcement, and mutual aid departments. Meetings should be scheduled on a regular basis to review situations and improve coordination or clarification between these groups. QI teams should avoid only having meetings when problems arise.

Examples:

1. The service program coordinates a meeting to discuss "Do Not Resuscitate" orders and how they should react when presented with this situation. This meeting involves the Medical Director, County Attorney, and Sheriff's Department.
2. The service program calls a meeting to discuss protocol updates. This meeting involves the Medical Director, hospital staff, suggested information from the QI committee, and the providers.

3. The service program would like to use a different brand of cervical collar. They call a meeting with the Medical Director, hospital staff, training officer, and providers to begin a QI process to evaluate all of the options.

QI Activities

#8-Establish QI Peer Groups

Purpose:

QI Peer Groups are designed to balance the judgment of any QI decision. QI suggestions can become limited if all of the decisions come from one person. A peer group of several providers using their best judgment allows for better acceptance than using one person. Suggestions from the Peer Group should be presented by the various customers. The QI peer group remains compliant with the direction of the Medical Director.

Method:

The Peer Group should be made up of providers that have a minimum level of practice as defined by the group. These providers should be volunteering to be a member of the group. The QI Peer group should consider having a staff person from the receiving hospital in the group to expand the input for group. An area ALS provider may offer an increased value also. The group should meet on at least a monthly basis to discuss patient care or system issues of importance.

Examples:

1. The Peer Group meets to determine an implementation plan for the use of vacuum splints that are new to the service. They also plan to track the use of these splints by asking for feedback from the hospital staff and the service providers.
2. The Peer Group meets to discuss the charts that they noted during the PCR reviews. They also discuss what messages will be sent to the providers regarding a particular sentinel event.

3. The Peer Group discusses the AED protocol and the need for more training to be sure that the first shock is delivered as soon as possible.

QI Activities

#9-Generating Activity Reports

Purpose:

Activity Reports are summaries of various measurable events that can be based on individual providers or on the entire EMS system at various levels. These reports can be used to establish trends, consistencies and rates of proficiency. Reviewing activity reports can help to establish training needs or system changes so that the patients receive better service. These summaries may be long term or short term studies. These activity reports are also important to the purchasing of equipment priorities and other financial aspects of the program.

Method:

Activity Reports involving response times can be generated by some dispatch programs, but most reports will generated from the formalized data collection tool (computer). Reports of interest need to be established by the QI team or organization's management and Medical Director.

Examples:

1. A service program finds that they have an average response time of ten minutes. Their goal is eight minutes and they take action to improve their average response.
2. A program reviews the number of calls that each member makes each year to determine how many active members they have and identify those that should be recognized for their dedication.

3. A program reviews the number of times that they performed cervical-spine immobilization in a year. They use this information to prioritize the purchase of new backboards above a new traction splint.

QI Activities

#10-Protocol & Procedures Review

Purpose:

An annual review of the service program's treatment protocols is imperative. This review is important to update the medical procedures and apply new rules and regulations that may effect treatments. The protocol should evolve as research and training improves the knowledge of the providers.

Method:

Protocol reviews should involve a variety of people. Interested providers, hospital staff and input from other systems should all be used when the review is done. Changes should be prioritized so that these protocols can be taught conveniently to the providers. Too many changes at one time may become confusing and difficult to track. The medical director will always have ultimate responsibility for any proposed changes.

Examples:

1. State EMS Rules and Regulations changed to allow the use of the advanced airway equipment for EMT-B's. The next years protocol review involved adopting the Combitube as part of the service program's airway management methods.
2. The providers have had some misunderstandings about minors and their ability to refuse service. The next protocol review includes a section to clarify and address this issue.

3. The protocol review committee has a request to review the splinting protocol so that it is consistent with the new vacuum splints that were purchased.
4. A service program purchases a new AED. The next protocol update involves writing the guidelines for use of the machine. The Medical Director chooses to adopt the ACLS standards for the use of AED's and the service program.

QI Activities

#11-Internship Program

Purpose:

An internship program is a plan to orient a new provider to methods and standard operating procedures of a service program. A new member of an EMS service may have the classroom training to be an EMT but may have no knowledge of the way that a system functions. This process will help to assure competency and allow for the new provider to become an effective team member. The QI team frequently measures the success of the internship program and makes suggestions for improvements.

Method:

The orientation plan for a new member should include a combination of discussion and/or classroom time and actual on-the-call supervision. The plan should involve a well-developed checklist of areas that need to be included in orientation. This plan may vary by the needs and background of the individual. An experienced person should serve as the training officer in order to provide consistent feedback.

Examples:

1. A newly trained EMT wants to join the local EMS agency. The new EMT has never been on an ambulance call before and is oriented to the system by an experience member. The orientation involves several discussions over the basic procedures that the service follows. They also supervise the new EMT during the first

six months of calls, which helps the new person to understand the role that they are to fill.
2. A new EMT is going through the orientation and it is found that they are have having problems taking a blood pressure in the back of the moving ambulance. The QI team investigates all possibilities of why this may be difficult for this provider. Suggestions for improving this skill are made to the field training officer.

QI Activities

#12-Development of Standards

Purpose:

Standards are generalized characteristics that should be met on all calls. Standards help to keep the providers focused on the basic principals of customer service. The progression of an EMS call is expected to follow the standards. Deviations may occur but will need to be documented and should be reviewed by the QI Team and Medical Director.

Method:

Standards should be established as a group with approval from the Medical Director. They should be reviewed by the receiving hospitals so that all patients transported to those facilities arrive with similar treatments during similar situations. Standards need to be used in training and supported by the leadership team.

Examples:

1. The Medical Director desires that a minimum of two sets of vital signs are assessed for each patient. The first set should be within five minutes of patient contact and the last set should be within three minutes of arrival at the hospital. Other vitals would be expected if there is a condition change.
2. The scene time standard for critical trauma patients is set at ten minutes. A specific call takes 16 minutes but the documentation shows that extrication efforts took ten minutes. This deviation is

acceptable and the extrication is discussed by the group to determine if any training is needed to decrease the time.
3. The standard for delivering oxygen to patients with cardiac related chest pain is high flow oxygen via a non-rebreather mask. The QI team reviews charts to confirm that this is happening in each case.

QI Activities

#13-Benchmarking

Purpose:

Benchmarking is a comparison of a system's performance statistics against the nationally established performance levels. Benchmarking is difficult due to the differences in definitions of the standards. The value of this comparison is to have a target to know when a program is at a level that can be considered satisfactory. This value can serve the Medical Director and leadership team as they determine training time and financial needs of the service program. Benchmarking has been evolving over the last several years and all values have not been firmly established.

Method:

Benchmarking is a comparison. It is necessary to determine how the benchmark was created and why it is important. Also, a service must be careful to not overemphasize the benchmark at the risk of losing focus on the care that is given to each individual patient. Standards must be clearly defined in order for accurate benchmarking to occur.

Examples:

1. A service is reviewing the use of the short backboard. They review the national PHTLS standards to determine the benchmark standard uses for this equipment.
2. A service is attempting to establish appropriate target scene times for trauma patients. Through research, they are able to determine

that the ten-minute standard is the benchmark for critical trauma patients.

3. XYZ ambulance service notices that only 2% of all cardiac arrest patients survive until discharge from the hospital. A neighboring agency says that they resuscitate 12%. The two agencies meet to investigate how XYZ can reach the benchmark established of 12%.

Suggested Reading

Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance
Provides examples of how to apply and compare benchmarking to other organizations.
By Robert C. Camp Quality Press-Milwaukee, Wisconsin

Deming's Road to Continual Improvement
This book provides an in-depth examination of Quality Improvement Practices. Deming explores QI beyond the methods, and provides insight pertaining to the philosophy of this concept.
By William W. Scherkenbach SPC Press-Knoxville, Tennessee

The Team Handbook
This easy to read guide provides examples and methods for utilizing a team approach for administering Quality Improvement.
By Peter R. Scholtes Joiner Associates-Madison, Wisconsin

A Leadership Guide to Quality Improvement for EMS Systems
If you only read one book, this is the one. This Manual created by NHTSA provides an overview of QI and EMS as described by Malcom Baldridge.
National Highway Traffic Safety Administration

Guide to Quality Control

Provides easy to understand methods for tracking data, charting outcomes and many other designs for displaying EMS data. By Karoru Ishikawa Quality Resources-White Plains, NY

Quality Management Websites

National Association of EMS Quality Professionals:
http://www.naemsqp.org

US Dept. Of Transportation NHTSA
http://www.nhtsa.dot.gov